

**A NOTE ON THE REARING OF
PLEXIPPUS SETIPES KARSCH
(ARANEAE: SALTICIDAE)**

Kazuyoshi MIYASHITA

National Institute of Agricultural Sciences,
Nishigahara, Kita-ku, Tokyo

Plexippus setipes KARSCH is a common species of the jumping spiders living in the grassland. However, the life history of this spider is quite unknown, so that I have tried to rear this spider under laboratory condition. This is a brief note on the results obtained from the rearing.

I. Method of rearing

The final instar nymphs, which were collected from the campus of National Institute of Agricultural Sciences, Nishigahara, Tokyo, in early June 1968, were reared in an insectary until they developed into adult. After mating, two females oviposited successfully on 25th June. The rearing of young nymph was started when they emerged from the egg-sac, 22nd July. Each young nymph was kept individually in a glass tube, 10 cm in long and 1.7 cm in diamater, with cotton stopper, and placed in an insectary at 27-28°C with illumination for 16 hours each day. Humidity was not controlled, but the range of it's fluctuation was 63-75 per cent in R.H.

Food for spider was *Psilopa* sp. *Laodelphax striatella*, *Nephrotettix cincticeps*, and *Drosophila melanogaster*. These preys were used in a rotation. During the first and second instar*, spiders were fed on *Psilopa* sp. adults, *L. striatella* larvae, and *N. cincticeps* larvae, but thereafter they were fed on *L. striatella* adults, *N. cincticeps* adults, and *D. melanogaster* adults. Spiders were divided into two groups: series A and B. In the series A, each spider was given 5-10 preys on every second day, while on every fourth day in the series B. The remnant of food wes removed on the next day or the other next day.

* In this paper the first instar nymph means the youngest nymph just emerged from egg-sac, and the number of moults was counted after this stage.

II. Results

Table 1 shows the duration of days in each instar of *Plexippus setipes* under two different feeding conditions. In the series A, one male and four females grew successfully up to adult, but the other died on the way of rearing. In the series B, only one female adult was obtained. There occurred a high mortality in both series, especially in the series B, but its cause was not clear.

The spiders moulted 5 to 6 times before they reached adulthood. This fact indicates that the number of moults necessary for the maturity is variable.

Table 1 Durations of days in each instar of *Plexippus setipes* under every second day feeding and every fourth day feeding conditions.

Condition	Number	Instar						Total
		I	II	III	IV	V	VI	
Every 2nd day feeding	A No. 1	13	15	15	22	129	(♂)	194
	2	11	—					
	3	12	19	30	19	32	(♀)	112
	4	11	17	16	26	—		
	5	11	—					
	6	12	16	13	26	—		
	7	13	19	19	28	36	83 (♀)	198
	8	14	22	35	18	18	31 (♀)	138
	9	11	17	14	59	34	—	
	10	11	17	16	24	21	—	
	11	15	24	26	14	25	37 (♀)	141
	Average	12.2	18.4	20.4	26.2	26.3*	50.3*	
Every 4th day feeding	B No. 1	13	—					
	2	16	—					
	3	11	22	27	—			
	4	15	32	35	—			
	5	14	22	31	38	—		
	6	14	20	—				
	7	15	32	—				
	8	14	28	—				
	9	16	26	—				
	10	16	22	65	39	—		
	11	23	17	39	29	40	49 (♀)	197
	Average	15.2	24.6	39.4	35.3			

* Average for the females which moulted 6 times.

The symbol — indicates death.

When the average values for the groups of spiders reared under two different

feeding conditions were considered, the durations of each instar became longer as instar proceeded. In some individuals, extreme prolongation of a certain instar was observed, e.g. the final instar of A No. 1 (♂) and A No. 7 (♀). The number of days required for the development from the first to fourth instar was, on average, 77.2 days in the series A and 114.5 days in the series B, the former was 37.3 days shorter than the latter. That is, the developmental speed of the spider was greatly affected by food condition. This fact had already been demonstrated in some other species by DEEVEY (1949) and MIYASHITA (1968).

Total number of days required for the development from the first instar to adult was 110-200 days in the series A. In addition, the number of days from the beginning of egg stage to the emergence of young nymphs from egg-sac was 27 days. From these facts, it is suspected that under the natural conditions this spider is, in most cases, impossible to complete its nymphal development within a year. According to MIYASHITA (1969), the overwintering nymphs of *Lycosa Tigrisignata* are in a diapause state. Therefore, the same phenomenon is expected to be exist in *Plexippus setipes*. If diapause were a necessary step for the normal development of this species, the rearing under constant temperature and photoperiod would have a possibility to bring about some abnormal growth, such as prolongation of certain instar. If the above speculation is true, the occurrence of the extreme long instar observed in this experiment could be explained reasonably.

III. Acknowledgement

I wish to express my thanks to Mr. KUNIMI for identification of the species.

IV. Summary

Plexippus setipes was reared under constant temperature (27-28°C) and photoperiod (16 hours each day), and the following results was obtained.

1. The spiders moulted 5 to 6 times before they reached adulthood.
2. Durations of days in each instar were greatly affected by the food condition, the duration was shortened when feeding interval became short.
3. Total number of days required for the development from the first instar to adult was 110-200 days, excepting the period of immature nymphal stage staying in egg-sac.

V. Literature cited

DEEVEY, G. B. (1949) The developmental history of *Latrodectus mactans* (FAR.) at

(34)

different rates of feeding. Amer. Midland Nat. 42:189-219.

MIYASHITA, K. (1968) Growth and development of *Lycosa T-insignita* BOES. et STR. (Araneae: Lycosidae) under different feeding conditions. App. Ent. Zool. 3:81-88

MIYASHITA, K. (1969) Seasonal changes of population density and some characteristics of overwintering nymph of *Lycosa T-insignita* BOES. et STR. (Araneae: Lycosidae). App. Ent. Zool. 4:1-8.